

ABSTRACT OF THE DISCLOSURE

A hydrogel composition and methods of preparing and using the same are disclosed. The hydrogel composition comprises an oxidized polysaccharide, and a cross-linker having at least two functional cross-linking groups. The cross-linker reversibly cross-links the polysaccharide and is provided in an amount to provide dangling cross-linkers. The method
5 of preparing a hydrogel comprises the steps of providing an oxidized polysaccharide, and providing a cross-linker having at least two functional cross-linking groups. The cross-linker is mixed with the polysaccharide at a concentration of the cross-linker sufficient to form a hydrogel wherein the cross-linker reversibly cross-links the polysaccharide and has dangling cross-linkers. The hydrogels are useful, for example, for tissue engineering, cell
10 transplantation and drug delivery applications.